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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/689,541      | 10/21/2003  | Yasushi Fujimoto     | 061069-0306016      | 9317             |

909 7590 12/29/2006  
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| EXAMINER |
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BUI PHO, PASCAL M

|          |              |
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| ART UNIT | PAPER NUMBER |
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2878

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 12/29/2006 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                   |                 |  |
|------------------------------|-------------------|-----------------|--|
| <b>Office Action Summary</b> | Application No.   | Applicant(s)    |  |
|                              | 10/689,541        | FUJIMOTO ET AL. |  |
|                              | Examiner          | Art Unit        |  |
|                              | Pascal M. Bui-Pho | 2878            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/832,800.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03 October 2006 has been entered.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/832,800, filed on 12 April 2001.

### ***Terminal Disclaimer***

3. The terminal disclaimer filed on 05 September 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Patent No. 6,649,893 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanke et al. (US 6,690,473) in view of Price et al. (US 5,790,710).

**With regards to claims 1 and 2,** Stanke et al. disclose in Fig. 5 a microscope comprising: a light source (70); a partially light-introducing member (75) that causes only a part of a light beam from the light source to enter the microscope; a light-condensing optical system (92) that condenses a light beam reflected from a sample (16) surface of the microscope; a photodetector (98) disposed at a light convergence position of the light-condensing optical system and having at least two light-receiving section, one of ordinary skill would recognized that a charge coupled device (CCD) consists of a plurality of photodetectors (Column 9, lines 33-35), the photodetector being disposed on an exit side of the light-condensing optical system; a multi-beam producing member (80) disposed in a path of light from the light source to the photodetector and producing a plurality of light beams (112a, 112b), which pass the multi-beam producing member to converge on a plurality of spots on the photodetector; wherein the sample is irradiated with the plurality of light beams. Stanke et al. however remain silent with regards to a focusing-state calculator calculating a focusing state of the microscope based on output signals from the photodetector. In an analogous microscopic art, Price et al. disclose in Figs. 1 and 4 a focus detecting device for a microscope, comprising, among other features, a focusing-state calculator (110, 112) that calculates a focusing state of the microscope based on output signals from a photodetector (108). At the time of the invention, it would have been obvious to one of ordinary skill in the art to include a focusing-state calculator, as taught by Price et al., in order to provide image outputs of higher quality. Stanke et al. further disclose the partially light-

introducing member (75) being a light-intercepting member that intercepts a beam of light from the light source (72), as claimed.

**With regards to claims 3 and 5**, Stanke et al. and Price et al. disclose a focus detecting device for a microscope, but lack an inclusion of a first crystal plate for the multi-beam producing member and wherein a second crystal plate is disposed on an exit side of a quarter-wave plate. Selecting a particular optics element for performing similar optical functions would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stanke et al. and Price et al. accordingly in order to provide a desired selection of the optics component for the microscope. The further inclusion of a second crystal plate disposed on an exit side of a quarter-wave plate would have been obvious for similar reasons set forth above.

**With regards to claim 4**, Stanke et al. and Price et al. disclose a focus detecting device for a microscope, but lack an inclusion of a quarter-wave plate disposed on an exit side of the first crystal plate. Selecting a particular optics element for performing similar optical functions would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stanke et al. and Price et al. accordingly in order to provide more control to the modulation of light beams.

**With regards to claims 6 and 9**, Stanke et al. and Price et al. disclose a focus detecting device for a microscope, but fails to further disclose a diffuser disposed on an exit side of the light source, to diffuse rays from the light source. The use of a diffuser for providing a desired distribution of light in an optical system would have been obvious to one of ordinary skill in the optics art. It would have been obvious to one of ordinary skill in the art at the time of the

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invention to modify Stanke et al. and Price et al. accordingly in order to widen the angle of the modulated light beam.

**With regards to claims 7 and 10**, Stanke et al. and Price et al. disclose a focus detecting device for a microscope, but fail to specify whether or not the light source is constructed as a surface-illuminant laser diode having a plurality of radiant points so that arrangement of the multi-beam producing member is dispensable. Selecting a specific or particular structure and/or type of a light source in order to provide a long lasting life of the light source would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stanke et al. and Price et al. accordingly in order to provide easier maintenance performance for the microscope. The further inclusion of a specific partially light introducing member as claimed in claim 10 would have also been obvious for similar reasons set forth above.

**With regards to claim 8**, Stanke et al. and Price et al. disclose a focus detecting device for a microscope, but lack an inclusion of at least one diffraction grating and a crystal plate as the multi-beam producing member. Selecting particular optics elements for performing similar optical functions would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stanke et al. and Price et al. accordingly in order to provide a desired selection of the optics component for the microscope.

**With regards to claims 11-15**, Stanke et al. disclose in Fig. 5 a microscope, comprising: a beam-splitting member (78) having a surface from which or through which an incident light beam is reflected or transmitted and is disposed at an intersection of an optical axis of a first path

of light and an optical axis of a second path of light; a light source (70) disposed in the first path of light; a multi-beam producing member (80) disposed between the light source and a sample (16), to produce a plurality of beams (112a, 112b); a light-condensing optical system (92) disposed in the second path of light on an exit side of the beam-splitting member, to condense the plurality of light beams passing the beam-splitting member; a photodetector (98) disposed in the second path of light at a light convergence position of the light-condensing optical system and provided with at least two light-receiving sections, one of ordinary skill would recognized that a charge coupled device (CCD) consists of a plurality of photodetectors (Column 9, lines 33-35), the photodetector being disposed on an exit side of the light-condensing optical system so that the plurality of light beams passing the multi-beam producing member converge on a plurality of spots on the photodetector; and a light intercepting member (84a) disposed between the light source and the photodetector to intercept a part of light beams passing there. Stanke et al. however remain silent with regards to a focusing-state calculator calculating a focusing state of the microscope based on output signals from the photodetector. In an analogous microscopic art, Price et al. disclose in Figs. 1 and 4 a focus detecting device for a microscope, comprising, among other features, a focusing-state calculator (110, 112) that calculates a focusing state of the microscope based on output signals from a photodetector (108). At the time of the invention, it would have been obvious to one of ordinary skill in the art to include a focusing-state calculator, as taught by Price et al., in order to provide image outputs of higher quality. Stanke et al. further disclose the light-intercepting member (84a) being disposed between the beam-splitting member (78) and the light condensing optical system (92); and the multi-beam producing member (80) being between the beam-splitting member (80) and an objective lens (82), as claimed. Stanke et

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al. further disclose the light-condensing optical system (92) comprising a lens element that condenses the plurality of light beams in such a manner that each of the plurality of spots on the photodetector (98) has a shorter diameter in a direction in which the spots are aligned (vertical) than a diameter in a direction perpendicular to the direction in which the spots are aligned (horizontal), as claimed.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

I) Ishihara (US 6,288,382) disclose a micro-scanning multi-slit confocal image acquisition apparatus comprising: a non-scanning multi-slit confocal image acquisition system using a slit array.

II) Kelderman et al. (US 4,844,617) disclose a confocal measuring microscope include a spectrometer and autofocus system sharing common optical elements.

### ***Telephone/Fax Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714. The examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pascal M. Bui-Pho  
Examiner, Art Unit 2878  
19 December 2006



THANH X. LUU  
PRIMARY EXAMINER